



Female Offender Re-entry Skills Training: An Intermediate Evaluation of Offender Recidivism and Program Cost

By Richard M. Swanson and Maryann Waugh

Abstract

In 2007, Colorado legislation enabled the development of enhanced mental health programs in the state. This article provides stakeholders, policy makers, and other interested persons with an intermediate evaluation of the Female Offender Re-Entry Skills Training (FOREST) program progress and efficacy since its start in July of 2008. This article contains background information describing the program's population and interim measures of program goals and objectives related to recidivism, treatment compliance, and vocational progress. A cost-savings analysis also compares program cost to the cost of incarceration. Finally, the article provides indices of change on symptom-related clinical and research measures. Background highlights include: National findings report particularly high costs associated with the incarceration of mentally ill and substance abusing offenders; rates of recidivism are very high for mentally ill and substance abusing offenders; outcomes are even worse for offenders with co-morbid diagnoses of mental illness and substance abuse disorders; and rates of mental illness/co-morbidity are highest in female offender populations. Intermediate evaluation highlights include: The FOREST program was designed using evidence-based practices to target the dually diagnosed female offender population in an effort to reduce the costs and improve the efficacy of treatment interventions for this population; intermediate outcomes show that the program is meeting the established goals and objectives associated with reducing recidivism and providing a more cost-effective alternative to facility-based treatment; a recidivism analysis of the first two years of program operation shows a 63% reduction in recidivism for program graduates in contrast to a matched comparison sample; and a conservative cost-per-day analysis estimates a cost savings of \$621,815.04 associated with 59 participants across 29 months of program operation.

Keywords: Cost, recidivism, reentry, substance abuse, and women.

Mental Illness and Substance Abuse/Co-Morbid Disorders

Mentally ill and substance abusing offenders are two subsets of offenders associated with particularly high incarceration costs (Gagliardi, Lowell, Peterson, & Jemalka, 2004, Prins & Draper, 2009, Przybylski, 2008). Reported statistics show that mentally ill offenders recidivate at rates that are approximately 10% higher than their non-mentally ill peers (C-DOC 2005 report as cited by Przybylski, 2008) and states such as Maryland have cited recidivism rates of almost 75% for mentally ill offenders (Gagliardi et al., 2004). A 2001 report further found that people with mental illness are 64% more likely to be arrested than persons without mental illness who have committed the same crime (Przybylski, 2008).

Analyses of the monetary costs and benefits of incarcerating drug offenders offer some sobering findings. A 2003 report by the Washington Institute for Public Policy estimated a \$0.37 gain in public safety for every \$1.00 spent on the incarceration of drug offenders, and a 2006 report on New York incarceration found an even smaller benefit of \$0.29 for every \$1.00 spent (Przybylski, 2008). In his report on sentencing reform for drug abusing offenders, Przybylski highlights the societal benefits associated with incarceration for violent crime, but also cites longitudinal research that shows that crime rates actually increase when the incarceration rate reaches between 3.25 and 4.92 offenders per 1,000 citizens; a level that Colorado state prisons reached in 2008.

Mentally ill offenders are also more likely to have been under the influence of drugs or alcohol while committing their crimes (Bureau of Justice Statistics Report, 2006 as cited by Przybylski, 2008) and rates of co-morbidity are quite high; for instance 75% of mentally ill study participants in a 2004 study of Washington State offenders were found to have a co-occurring substance abuse disorder (Gagliardi, Lowell, Peterson, & Jemalka, 2004), and 72% of mentally ill, justice involved women in Chicago were found to have a co-occurring substance abuse disorder (Abram, Teplin, & McClelland, 2003). Offenders with co-morbid disorders often have even worse outcomes than offenders with only a mental health diagnosis, leading to an extremely high cost to society in terms of crime, incarceration, and recidivism (Abram et al., 2003).

Female Offenders

Female offenders are three times as likely as males to be diagnosed with a serious mental illness (C-DOC 2005 report as cited by Przybylski, 2008) and are almost twice as likely to have a history of drug abuse (Lovell et al., 2002). Given these statistics, the population of female, mentally ill and substance abusing offenders is a particularly important sub-population for targeted intervention.

What Works?

A growing body of evidence supports the use of community-based programs as a more cost effective alternative to prison sentences for many mentally ill and substance abusing offenders. The 'What Works' literature has identified some clear intervention strategies for reducing recidivism for mentally ill/substance abusing offenders including integrated mental health and substance abuse treatment, cognitive-behavioral programs, supported employment and supportive housing, and individualized interventions that focus on the time period immediately following community re-entry (Prins and Draper, 2009). In their

comprehensive guide to research informed policy for people with mental illness under community corrections supervision, Prins and Draper specifically highlight crime trends that show recidivism declines over time after release to the community. They note that individualized, targeted interventions in the months immediately following release represent the most cost-effective way to reduce costs associated with the cycle of incarceration and recidivism.

FOREST Program

In 2007 the State of Colorado passed Colorado State Senate Bill 97 to allocate tobacco settlement money towards enhanced health programs across the state. Subsequent to DBH's funding of the AuMHC FOREST program, the Colorado Department of Corrections (C-DOC) and the Aurora Mental Health Center (AuMHC) collaborated to request a National Institute of Corrections (NIC) technical assistance grant to visit model sites for programs designed to improve mental health services and reduce recidivism rates for mentally ill, female offenders. NIC funded a team of C-DOC and AuMHC program designers to visit program sites in Ohio and New York. In keeping with the low cost-to benefit ratio of incarcerating mentally-ill, substance abusing females and in keeping with the 'What Works' literature, FOREST was designed as a 52-week individualized, CBT-based program for motivated adult female offenders with an Axis I diagnosis, a non-violent history, releasing on parole to the Denver Metro/Aurora community. C-DOC funds a ten-week in-reach portion where offenders begin to prepare for community re-entry and DBH funds the 42-week community transition portion.

The FOREST program includes:

- A ten-week in-reach component consisting of a CBT curriculum taught within the C-DOC's Denver Women's Correctional Facility (DWCF) in preparation for community reintegration;
- A bridge group for in-reach graduates awaiting community release on parole;
- A 42-week community component consisting of CBT groups, individual therapy, vocational assistance, individualized case management, and assistance accessing additional federal, state, and community resources;
- A 14-bed transitional housing unit; and
- Funding for prescribed psychotropic medications.

Evaluation

As part of SB-97 funding, the FOREST program is monitored for fidelity and efficacy. The Aurora Research Institute (ARI) is a 501(c)(3) non-profit organization incorporated in 1987 to conduct behavioral health research and program evaluation. ARI maintains program process and outcome data and submits regular reports to funders and stakeholders. While a final evaluation of program efficacy cannot be completed until three years after the last participant discharges from the program, the current report describes the intermediary evaluation of two program outcomes; a reduction in recidivism and a reduced cost to the state associated with FOREST program participation. Each outcome has two associated objectives.

Reducing Recidivism

One FOREST program goal is to reduce the recidivism rate for mentally-ill parolees with or without substance abuse issues. Two objectives are associated with this goal:

- Reduce return-to-prison revocation rates for the women enrolled in the program for a minimum duration of one year as compared to the average rate of revocation of similar parolees over a prior three-year time span; and
- Reduce return-to-prison revocation rates for new charges by 25% for the women enrolled in the program for a minimum duration of one year (new offense misdemeanors and felonies tracked separately) as compared to the average rate of revocation of similar parolees over a prior three-year time span.

Method: At the close of fiscal year 2009-2010 there were eight FOREST women who had participated in the program for at least one year, or who had successfully met program criteria or completed their parole sentence in less than a year's time and had been discharged from FOREST in good standing. To evaluate the efficacy of the FOREST program in reducing recidivism for these program completers as compared to similar, mentally ill offenders, a propensity score analysis and *t*-test were conducted. While experimental design that incorporates random assignment to treatment groups is the gold standard used to address causal relationships, experimental design was impossible without parole board agreement and was rejected as a design possibility for this program. Propensity matching, however, is a statistical method specifically designed to evaluate treatment effects when randomization is not feasible. Propensity matching uses regression to reduce a multitude of potentially confounding covariates (i.e. predictors such as age, gender, IQ etc.) to one propensity score, upon which treatment and comparison study participants are matched (Guo & Fraser, 2010, p 1-13). When the appropriate group of predictors is included, this quasi-experimental method allows researchers to generate accurate causal estimates without bias due to observable variables (Rosenbaum and Rubin, 1983). Propensity matching enabled the researchers to draw reasonable causal relations about the predictors of FOREST program efficacy.

The treatment group consisted of all FOREST participants who had completed the FOREST program by the time of analysis (July, 2010). The pool of potential comparison group participants consisted of all non-FOREST, mentally ill, female offenders, who were paroled during the same time period. The researcher used linear regression to calculate a propensity score to model the likelihood of each study subject's likelihood of being included in the treatment (FOREST program) based on the independent variables (predictors of success): release type (discretionary or mandatory), number of previous incarcerations, age, IQ, C-DOC mental health needs code, C-DOC sexual offense needs code, C-DOC substance abuse needs code, C-DOC academic needs code, and C-DOC vocational needs code.

Using this propensity score, each FOREST graduate (N=8) was matched to a non-FOREST female parolee who was released to parole within the same week. Because the pool of potential comparison parolees was so large, in this analysis researchers were able to match FOREST participants with comparison group parolees who had the same, not just the closest, propensity score. In cases where more than one comparison parolee had the same score as a treatment participant, the comparison parolee with the closest date of release was selected.

Once the eight comparison group parolees were identified through the propensity matching method, the researcher conducted a *t*-test analysis to determine the statistical significance of the difference between the groups' average rates of revocation.

Results: None of the FOREST participants had been revoked or received a new charge at the time of analysis. Of the eight matched comparison parolees, no participants had been revoked to C-DOC for a new charge and five (62.5%) had been revoked to C-DOC for technical parole violations. *T*-test analysis revealed that this difference was statistically significant, $\chi^2(1, 16)$, $p < .05$.

Table 2: Revocation Rates Results:

	FOREST (n=8)	Comparison Group (n=8)
Succeeding in Community	100%	37.5%
Revocation: Parole Violation	0%	62.5%
Revocation: New Charge		
Misdemeanors	0%	0%
Felonies	0%	0%
Total Failure*	0%	62.5%

* Difference is significant at the .05 level

** All data for FOREST and comparison parolees was provided by the C-DOC Office of Planning and Analysis.

Discussion: The social science evaluation literature still lacks a commonly accepted way to define program efficacy. While some believe that all individuals who participated in any portion of treatment at all should be included in analyses of outcomes, others argue that such methodology runs counter to prevailing outcomes study in other research arenas that typically only include treatment completers in outcome analyses. A recent white paper from the Colorado Commission on Criminal and Juvenile Justice Treatment Funding Working Group reports that an evidence-based definition of substance abuse must capture the chronic nature of the disease and that treatment efficacy evaluation should follow medical models used for other chronic illness like hypertension and diabetes. In medical treatment studies only treatment completers are included in analyses based on the logic that participants who did not participate in a full dose of treatment are not expected to show medical improvements. Similarly, treatment effects are measured immediately, not 6 month or more following a full dose of treatment because treatment effects (i.e. medication effects) are not expected to maintain once an individual with a chronic illness discontinues treatment (English, 2010).

Following the tradition of medical trial evaluation, we believe social science program evaluation should include an analysis of efficacy including only those participants who received a full dose treatment, and should report treatment adherence/treatment completion rates with other key process measures. While many drug addiction treatments have been criticized for low rates of completion, National Institute of Drug Abuse (NIDA) has argued that drug addiction treatment completion rates of 40-60% are no different than treatment adherence rates reported by the medical literature for other long-term treatments (English, 2010).

As the sample size is small, it is likely that this rate of success is not stable and may change as more FOREST completers and comparison parolees are added to the analysis. That said, this is a very promising finding and indicates that moving forward, program practices should focus on increasing the number of successful program completions. The primary limitation to this comparison is that the treatment status of comparison parolees was unknown. While there is no other coordinated, comprehensive, re-entry program available for mentally-ill parolees elsewhere in the state, comparison participants may have been participating in pre-or post-release substance abuse treatment and/or some combination of private/group therapy through private or public mental health centers. If that were true, it would actually strengthen the argument for FOREST efficacy as the comparison parolees recidivated at a greater rate despite any treatment received.

Cost savings

A second goal involves cost savings to the state of Colorado associated with treating mentally-ill and/ or dual-diagnosed female offenders. Two objectives associated with this goal include:

- Provide community-based treatment to mentally-ill or dually diagnosed female offenders at a cost less than that of facility-based treatment; and
- Demonstrate a continued cost-savings resulting from program completion.

Method: Two cost savings analyses were conducted to estimate the actual dollar amount saved by treating mentally ill, substance abusing offenders in the FOREST program. Savings were calculated by comparing the cost of client sentence time spent in FOREST against the cost that would have been incurred had the offender spent that same sentence time at DWCF. Savings were calculated only for clients who had been discharged from the FOREST by the time of analysis (November 30, 2010). Clients can be discharged for successful completion, parole revocation, or new charges. Only clients who have been discharged can be included in cost savings analysis because similar to survival analysis, the cost savings analysis is based upon length of stay (LOS) before the event of program discharge, and LOS can only be determined once the event of the discharge occurs. Two cost-savings analyses are included below:

- *An analysis calculating savings for all clients who had been discharged from the FOREST by the time of analysis (November 30, 2010) comparing the cost of their time in the FOREST program to the cost that would have been incurred if that time were spent incarcerated at DWCF. This*

analysis includes clients who successfully completed the FOREST program as well as clients who were discharged from the program for reasons like parole revocation. The longer clients remain active in treatment and out of DWCF, the greater the cost savings. The maximum length of stay in FOREST is 42 weeks (294 days).

- *An analysis calculating savings for program graduates after their FOREST program completion as compared to a propensity matched sample.* This sample compares the total cost of all FOREST graduates' days in DWCF *after FOREST graduation* to the total cost of all the comparison parolees' days in DWCF during the same window of time.

Cost savings are reported using the most current published cost per day for DWCF (Published in the C-DOC 2008 Statistical Report). C-DOC does not have a published estimate for the cost of housing mentally ill offenders at DWCF. As all of the FOREST clients have P3C designations, are on psychotropic medications, and have substance abuse treatment needs, it is likely that the average DWCF cost per day underestimates the true cost of housing this specific population. While San Carlos Correctional Facility (SCCF); a specialized facility for mentally ill offenders does not serve female offenders, it is likely that the cost of housing a mentally ill/ substance abusing offender at DWCF is closer to \$190.14; the cost of housing a male offender at SCCF. By comparing FOREST costs to the average cost per day of DWCF, ARI has presented the most conservative estimate of cost savings. As SCCF costs are close to \$90/day per offender greater than DWCF, the calculated cost savings in this report may underestimate savings by up to \$90/day per offender.

Cost savings were calculated using the following variables: The case rate paid through SB97 funds to AuMHC for FOREST services per client: \$8,227.05. This was divided by the FOREST program length 42 weeks (294 days) to get a FOREST cost per day of \$27.98. The 2008 published cost per day of DWCF of \$105.00 was used as a conservative estimate of a C-DOC cost per day for this population;

Table 4: Cost Per Day by Location/Facility

	Cost Per Day
FOREST	\$27.98
*Denver Women's Correctional Facility (DWCF)	\$105.00
**San Carlos Correctional Facility (SCCF)	\$190.14

** As reported in the 2008 C-DOC Statistical Report*

***As reported in the 2010 Budget Hearing*

The difference between the prison cost per day and the FOREST cost per day was multiplied by the number of days each client spent in the FOREST program (LOS) before being discharged.

Results: Comparing the reported average cost per day of incarceration at DWCF to the FOREST cost per day resulted in a calculated cost savings of \$621,815.04 across 29 months. The first graduate completed FOREST in April of 2009. Between that date and November 30, 2010, no FOREST graduates had been returned to C-DOC. During that same time, five of the eight comparison matches that had been revoked

or returned to C-DOC for a new charge, and had spent a total of 2,374 days in the DWCF facility for an additional graduate cost savings of \$ 249,270.00.

Table 5: Cost Savings Analysis for all Clients Discharged by Time of Analysis

	# Clients Discharged	Total Days in FOREST	DWCF CPD \$105.00	FOREST CPD \$27.89	Cost Savings
FY 2008-2009	15	1,913	\$200,865.00	\$53,353.57	\$147,511.43
FY 2009-2010	33	4,250	\$446,250.00	\$118,532.50	\$327,717.50
FY 2010-2011 through Nov 2010	11	1,901	\$199,605.00	\$53,018.89	\$146,586.11
Total Cost Savings: July 2008 through Nov 2010	59	8,064	\$846,720.00	\$224,904.96	\$621,815.04

The first cost-per-day analysis compares the cost of treating offenders in FOREST during the duration of the program versus housing them in the DWCF prison facility. It is also important to consider the savings associated with graduates who, because of the support and skills gained in the FOREST program, are able to live successfully in the community after they have completed the FOREST program. To estimate savings associated with these graduates, an additional cost-savings analysis was calculated for the women who had graduated from FOREST by the end of the FY 2009-2010 fiscal year. The length of time they were able to stay successful in the community after receiving a full dose of FOREST treatment was compared to that of the parolees who served as their comparison matches in the propensity score revocation analysis.

Table 6: Cost Savings Analysis post Program Completion

	Days in C-DOC post-graduation	Cost to C-DOC \$105.00 CPD
FOREST Graduates (N=8)	0	\$ 0.00
Comparison Parolees (N=8)	2,374*	\$ 249,270.00
Savings	2,374	\$ 249,270.00

* The days in C-DOC post-graduation for the comparison parolees is the sum of the days spent by each of the five comparison parolees who were revoked during the analysis time window.

Discussion: These calculations show that between participant time spent in FOREST treatment and graduate time spent in the community instead of DWCF, the state of Colorado was able to save almost one million dollars across 29 months. Propensity matching allows for stronger causal claims making the graduate cost-savings comparison particularly striking. It is important to note that the cost savings analysis for all participants is based on a comparison assuming that FOREST participants are released on discretionary parole earlier than non-FOREST participants. The majority of FOREST participants do release without stable and secure housing, and typically parole officers deny such parole plans until mandatory release date - making this assumption fairly reasonable. Another limitation is that the cost of parole is excluded in the calculations for both comparison and treatment participants. While both of those limitations could indicate an under-represented cost of FOREST treatment versus incarceration, the previously mentioned limitation could indicate an under-represented cost of incarceration. While a published cost per day of DWCF was used for these analyses, that CPD was an average CPD that did not take into account the high cost of psychotropic medication and treatment associated with incarcerating mentally-ill or dually diagnosed offenders. Taken together, these limitations do not likely change the overall savings described. At this intermediary point, it appears that the FOREST evaluation echoes the prevailing findings regarding the treatment of mentally-ill/dually diagnosed offenders: community based treatment is a more effective and efficient way to treat incarcerated mentally-ill/dually diagnosed offenders.

Treatment Length of Stay (LOS)

As of November 30, 2010, the FOREST program has a 100% success rate for program completers; meaning that none of the clients who complete the program as designed have been returned to C-DOC custody. Current Program goals include increasing the number of successful program completers. An intermediate measure of success towards this goal is increasing the client LOS. The longer the FOREST program can engage clients in treatment, the greater the graduation rate and the greater the program cost savings. Since July 1, 2008 when the FOREST program began, the average length of stay in FOREST (before discharge or completion at 294 days) has increased by over 45 days. Currently, the FOREST program are preparing to add peer mentors to increase the length of treatment and the number of clients that complete the program.

Table 7: Treatment Length of Stay (LOS)

	FOREST Average LOS (days)
FY 2008-2009	127.5
FY 2009-2010	128.8
FY 2010-2011 through Nov 2010	172.8

Clinical and Research Outcome Measures

The following measures include all available data for FOREST clients who participated in the community portion of the program and who consented to be part of these additional research measures. The following data represents:

Summary of Clinical and Research Outcome Measures

- The largest portion of FOREST participants identified themselves as White (44%)
- The average age of FOREST participants was 39 years at community release
- Overall psychiatric scores fell in the Average range
- Reported Depression scores dropped from Moderate at Baseline to Mild at Time 2
- Quality of Life scores were Low at both Time 1 and Time 2; although ratings for making Goals and Learning improved at Time 2
- Overall, FOREST participants were low in tolerance for criminal behavior. The sub-scale with the highest score dealt with participants' beliefs about the fairness of the court system at both time points.
- Efficacy scores for both Coping and Mental Health scales were moderately high
- Locus of control beliefs were moderately external

Table 8: Client Demographics

	N	%
Race		
White	27	44.1%
Black	16	27.1%
American Indian / Alaskan Native	4	6.8%
Biracial	2	3.4%
Other	2	3.4%
Not Reported	9	15.3%
Ethnicity		
Hispanic	18	30.5%
Non-Hispanic	41	69.5%
Total	60	100%
	<i>Average</i>	<i>Range</i>
Age (years)	39.3	22-57

Note: In prior reports, 'Hispanic' was listed as a racial category. It is now listed under Ethnicity to match National Institutes of Health reporting criteria. Some Hispanic individuals also selected one or more racial categories. Eight of the nine individuals who did not report their race did identify as Hispanic.

Clinical and Research Instrument Composite Scores

T-tests were conducted to evaluate the change in clinical and research measures between baseline and a 6-month follow up. To be included in this analysis, clients had to have participated in the community portion of the program, and had to have consented to and participated in both baseline, and 6-month follow up data collection. Some clients completed baseline measures while in the in-reach portion of the program and others completed baseline measures early in the community phase of the program. All participants completed 6-month follow up measures in the community. As the sample grows, clients who completed baseline at in-reach versus in the community will be analyzed separately.

Table 9: Outcome Measures

Outcome Measure	Cumulative Data Through July, 2010				
	<i>N</i>	<i>BL Average</i>	<i>6-Mo. Average</i>	<i>Change Score</i>	<i>Statistical Significance</i>
BSI (Brief Symptom Inventory)	13	49.2	39.2	10.0	$p=.01^{**}$
BDI II (Beck Depression Inventory)	14	24.3	14.6	9.6	$p=.08$
QOLI (Quality of Life Inventory)	20	0.6	1.4	-0.8	$p=.06$
Rotter's Internal-External Control Scale	20	5.5	5.1	-0.4	$p=.04^{*}$

Clinical change scores indicate change in the direction expected following effective mental health treatment. BSI scores show that mental health symptom distress significantly decreased from the high to the low end of the Average range over time. The change in BDI score did not quite reach statistical significance, however scores decreased from 'Moderate' to 'Mild' levels of depression by 6-month follow up. QOLI scores show that participants' perceived quality of life increased from the low to the high end of the 'Low' range over time. Finally, participants' locus of control scores show a small but significant decrease indicating that their beliefs reflect a slightly more internal locus of control after six months of treatment.

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APPENDIX A

Description of Instruments and Scores

BSI – Brief Symptom Inventory consists of 53 items covering nine symptom dimensions: Somatization, Obsession-Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic anxiety, Paranoid ideation and Psychoticism; and three global indices of distress: Global Severity Index, Positive Symptom Distress Index, and Positive Symptom Total. The global indices measure current or past level of symptomatology, intensity of symptoms, and number of reported symptoms, respectively. The Global Severity Index is reported quarterly as it is the instrument's most sensitive single indicator. Traditional T-score interpretation applies; scores of 41- 59 are considered Average, 60 – 69 are At-Risk, and 70 or above are considered Clinically Significant. [Range for each scale 28/38 – 73/81]

BDI II – Beck Depression Inventory measures the severity of depression in persons 13 years or older. The 21 items ask about symptoms commonly reported in clinical settings and include Mood, Pessimism, Guilt, and others. Symptoms are ranked from 0-3. Cut-off scores were developed using a population diagnosed with Major Depression. Accordingly, scores between 0 and 13 indicate Minimal symptoms, 14-19 are Mild, 20-28 are Moderate, and 29-63 are Severe. [Range 0 – 63]

QOLI- Quality of Life Inventory is a non-pathology oriented measure of a person's subjective well-being. It was developed based on the theory that measuring psychiatric symptoms and negative affect alone do not provide a complete picture of mental health or progress in a treatment program. It addresses 16 areas of life including Health, Work, Play, Friends, and Relatives. Scores between 3.6 and 6 indicate a High quality of life, 1.6-3.5 are Average, 0.9- 1.5 are Low, and -0.6 – 0.8 are Very Low. [Range -6.0 to + 6.0]

Rotters Internalizing/Externalizing Scale is a 13-item tool to measure personal expectancies for how much control an individual can exert over events in her/his lives. Low scores indicate an internal locus of control and high scores indicate an external locus of control. [Range 0 – 13]

